

A Case of Spondylodiscitis due to *Bacteroides Fragilis* in Febrile Patient With Past Thoracic Vertebral Trauma

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Abstract

Spondylodiscitis caused by *Bacteroides fragilis* in an uncommon finding. We report a case of spondylodiscitis due to *Bacteroides fragilis* in a febrile young patient with history of previous trauma to the back. Sub-acute appendicitis was considered the portal of entry of infection. The patient was febrile but did not complain spinal pain. 2-^[18F]fluoro-2-deoxy-D-glucose (FDG) positron emission tomography (PET) was very useful in the diagnosis of this pathology.

Keywords: Spondylodiscitis; *Bacteroides fragilis*; Febrile patient; Thoracic vertebral trauma

Introduction

Spondylodiscitis due to *Bacteroides fragilis* is an infrequent finding that often results from hematogenous spread from a digestive portal of entry. No previous case reports have described spondylodiscitis due to *Bacteroides fragilis* that occurred after a spine trauma. We assume that spine trauma could represent a “*locus minoris resistentiae*” facilitating the initiation of a new focus of infection for *Bacteroides fragilis* from a primary intestinal infective focus.

Case Report

A 41-year-old white Caucasian man was admitted to our Operative Unit because of abdominal pain and fever. Past medical history revealed bilateral nephrolithiasis and depressive syndrome. One year before he had experienced a thoracic trauma, secondary to car crash, without any neurological consequences. His medications included an antidepressive drug (venlafaxine) and benzodiazepines.

On admission the patient presented a temperature of 38.8 °C and complained colicky abdominal pain. A thorough physical examination was performed. Abdominal examination revealed diffuse tenderness without signs of peritoneal irritation; Murphy’s sign, renal and appendicular punches were negative. Heart, neurological, and thoracic examinations were unremarkable. On laboratory tests, the cell count demonstrated 12,470 white blood cells per cubic millimeter, with 70% neutrophils. C-reactive protein (PCR) was 21.6 mg/dL. Hepatic, renal, coagulative function, and urinalysis were within normal limits. Blood and urine cultures were negative. Abdominal X-ray, chest radiography, and abdominal ultrasounds showed no abnormalities. The abdominal CT scan demonstrated sub-acute appendicitis. Surgical treatment was not indicated and an empirical antibiotic therapy with I.V. levofloxacin and antipyretic drug (paracetamol) and was started. After 7 days, the patient presented a complete remission of the symptoms; a control TC scan of the abdomen showed the regression of appendicular inflammation; nevertheless, within a few days fever accompanied by shivering recurred. Because of the persistent febrile status of unknown origin, blood culture specimens were further collected and a 2-^[18F]fluoro-2-deoxy-D-glucose (FDG) positron emission tomography (PET) was requested. Contrast tomography (CT) attenuation images were used for PET correction (PET/TC). PET/TC revealed an intense FDG uptake in the intervertebral disc between thoracic vertebra 6 and 7; no abnormal FDG uptake was recognized in other areas and diagnosis of discitis was made (Fig. 1). T2-weighted magnetic resonance imaging (MRI) revealed a hyperintense signal in T6 and T7 vertebral bodies and in the corresponding intervertebral disc

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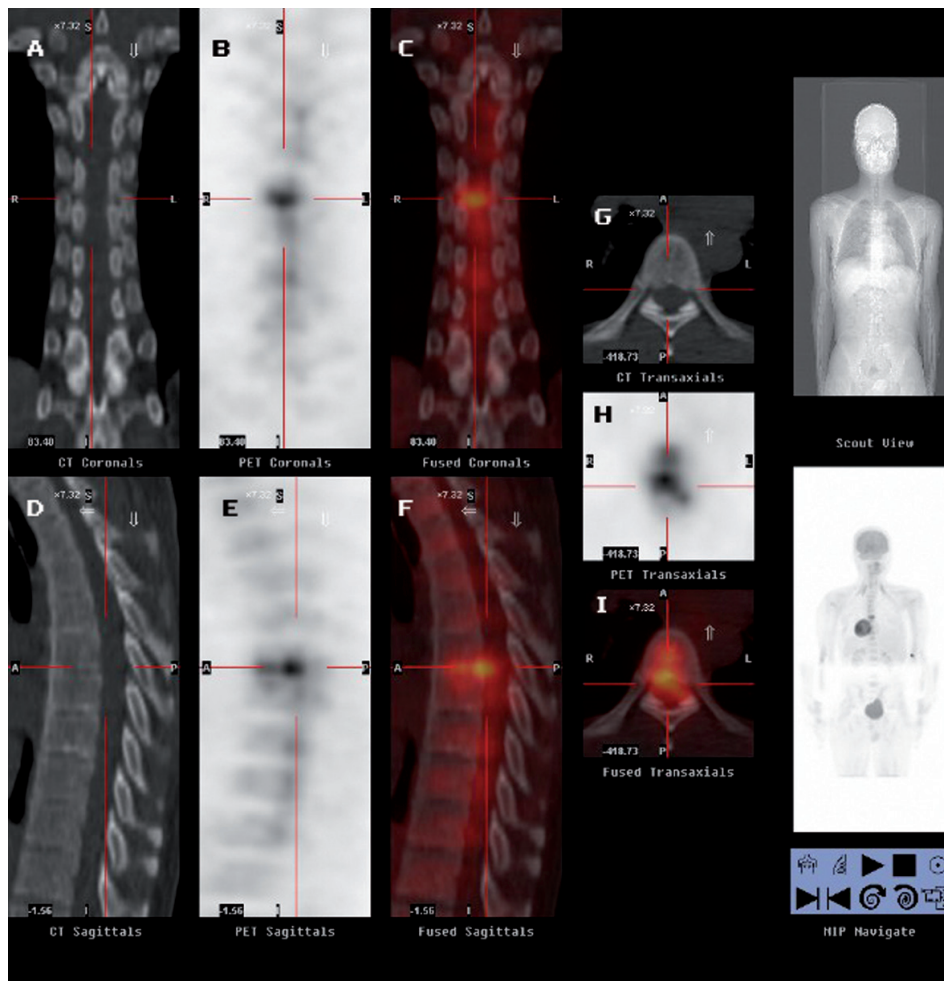


Figure 1. Images of patient's thoracic spine demonstrating the presence of inflammatory process in the intervertebral disc between T6 and T7. CT (A), PET (B), and fused (C) coronal view; CT (D), PET (E), and fused (F) sagittal view; CT (G), PET (H), and fused (I) transaxial view.



Figure 2. T2-weighted sagittal image of patient's thoracic spine showing hyperintense signal in T6 and T7 vertebral bodies and in the corresponding intervertebral disc.



Figure 3. Post-gadolinium T1-weighted MRI sagittal image demonstrating avid enhancement of the lesions in T6-T7 and intervertebral disc associated with the presence of an extradural collection.

(Fig. 2), where post-gadolinium T1-weighted MRI demonstrated a strong enhancement associated with the presence of an extradural collection (Fig. 3). These radiological findings were consistent with spondylodiscitis. Once blood cultures grow *Bacteroides fragilis*, the diagnosis of spondylodiscitis caused by *Bacteroides fragilis* was made. As expected on the basis of clinical course, *Bacteroides fragilis* strain was resistant to quinolones, while it was sensitive to metronidazole and piperacillin/tazobactam. A combined treatment with these drugs was started, while levofloxacin was discontinued, with complete remission of fever. After 2 months follow-up, a thoracic spine MRI showed a complete regression of the inflammatory pattern.

Discussion

Spondylodiscitis due to *Bacteroides fragilis* in an uncommon finding [1]. Most cases of spondylodiscitis caused by *Bacteroides fragilis* result from hematogenous spread from a digestive portal of entry [2]. The patient's previous vertebral trauma might have represented the so-called "*locus minoris resistentiae*" [3] facilitating the initiation of a new focus of infection for *Bacteroides fragilis*. We assumed that the traumatized bone and discal tissues might be more vulnerable to invasive hematogenous bacterial infection, and that appendicular tract represented primary infective focus. Recently has been reported a case of spondylodiscitis caused by direct inoculation of *Bacteroides fragilis* that occurred after a percutaneous epidural adhesiolysis [4].

To the best of our knowledge, there are no previous reports of spondylodiscitis due to *Bacteroides fragilis* that occurred after a spine non-iatrogenic trauma.

As described in other clinical reports [5], our report confirms that PET/CT could be very useful in detecting spon-

ylodiscitis in asymptomatic subjects.

Conclusions

Our case report suggests that spondylodiscitis due to *Bacteroides fragilis* should be considered in differential diagnosis in patients with fever of unknown origin and past history of spinal trauma, even if asymptomatic for spinal pain, especially in those who have experienced a recent abdominal infection.

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